AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Currently Amended) An atomic layer deposition (ALD) process using starved reactions, said ALD process comprising:

exposing a wafer to a starved dose of a first chemically reactive precursor, said starved dose being selected to yield less than one-half of ~~a dose value required for~~ a maximum saturated ALD growth rate, measured in film thickness per ALD process cycle, for said first chemically reactive precursor, wherein said first chemically reactive precursor is a soft saturating precursor characterized by an onset of a slow increase in ALD growth rate with further increases of precursor exposure dose and having a longer saturation time as compared to a second chemically reactive precursor to follow the first chemically reactive precursor, and the exposure to the starved dose of the first chemically reactive precursor determines a value of a starved saturation ALD growth rate, measured in film thickness per ALD process cycle, for a second chemically reactive precursor to follow the first chemically reactive precursor; and

exposing the wafer to a dose of the second chemically reactive precursor, the dose of the second chemically reactive precursor selected for achieving starved saturation of the second chemically reactive precursor under variations in dose of the second chemically reactive precursor, said starved saturation characterized by an ALD growth rate, measured in film thickness per ALD process cycle, of the second chemically reactive precursor being less than half of a maximum saturated ALD growth rate, measured in film thickness per ALD process cycle, for the second precursor,

wherein:

said starved dose of said first chemically reactive precursor and the dose of the second chemically reactive precursor are selected to obtain a maximum starved ALD process film deposition rate as measured in film thickness per unit time for the first and second chemically reactive precursors, and

said first and second chemically reactive precursors are delivered sequentially in time ~~and in a manner so as to provide a substantially uniform film deposition on the wafer~~.

2 - 10. (Cancelled)

11. (Currently Amended) ~~The ALD process of claim 1, wherein~~ An atomic layer deposition (ALD) process using starved reactions, said ALD process comprising:

exposing a wafer to a starved dose of a first chemically reactive precursor, said starved dose being selected to yield less than one-half of a maximum saturated ALD growth rate, measured in film thickness per ALD process cycle, for said first chemically reactive precursor, wherein said first chemically reactive precursor is a soft saturating precursor characterized by an onset of a slow increase in ALD growth rate with further increases of precursor exposure dose and having a longer saturation time as compared to a second chemically reactive precursor to follow the first chemically reactive precursor, and the exposure to the starved dose of the first chemically reactive precursor determines a value of a starved saturation ALD growth rate, measured in film thickness per ALD process cycle, for a second chemically reactive precursor to follow the first chemically reactive precursor; and

exposing the wafer to a dose of the second chemically reactive precursor, the dose of the second chemically reactive precursor selected for achieving starved saturation of the second chemically reactive precursor under variations in dose of the second chemically reactive precursor, said starved saturation characterized by an ALD growth rate, measured in film thickness per ALD process cycle, of the second chemically reactive precursor being less than half of a maximum saturated ALD growth rate, measured in film thickness per ALD process cycle, for the second precursor,

wherein:

said starved dose of said first chemically reactive precursor and the dose of the second chemically reactive precursor are selected to obtain a maximum starved ALD process film deposition rate as measured in film thickness per unit time for the first and second chemically reactive precursors, and

said first and second chemically reactive precursors are delivered sequentially in time, and one of the first and second chemically reactive precursor doses comprises water (H_2O) and the other comprises Trimethylaluminum (TMA).

12 - 14. (Cancelled)

15. (Currently Amended) The ALD process of claim [[1]] 11, wherein one or both of the first and/or second chemically reactive precursor doses is applied for a time between approximately 0.02 sec to approximately [[2]] 0.5 sec.

16. (Cancelled)

17. (Previously Presented) The ALD process of claim 1, wherein the dose of the second chemically reactive precursor is delivered substantially uniformly over the wafer.

18. (Original) The ALD process of claim 1, further comprising repeatedly exposing the wafer to the first and second chemically reactive precursor doses to form a material film on the wafer.

19.- 41. (Cancelled)

42. (Previously Presented) The ALD process of claim 1, wherein a non-uniformity of a thickness of a resulting film is within +/- 1.5%, 1 sigma.

43. (Previously Presented) The ALD process of claim 1, wherein the first and second chemically reactive precursors are delivered substantially uniformly via a showerhead or distribution plate.

44 - 46. (Cancelled)

47. (Previously Presented) The ALD process of claim 1, wherein a purge follows exposure of the wafer to the starved dose of the first chemically reactive precursor, but no purge follows exposure of the wafer to the dose of the second chemically reactive precursor.

48. (Previously Presented) The ALD process of claim 1, wherein exposure of the wafer to the second chemically reactive precursor follows exposure of the wafer to the starved

dose of the first chemically reactive precursor without a purge, and a purge is used following exposure of the wafer to the dose of the second chemically reactive precursor.

49. (Previously Presented) The ALD process of claim 1, wherein purges follow exposure of the wafer to both the starved dose of the first chemically reactive precursor, and the dose of the second chemically reactive precursor.

50. (Previously Presented) The ALD process of claim 1, wherein exposure of the wafer to the second chemically reactive precursor follows exposure of the wafer to the starved dose of the first chemically reactive precursor without a purge, and no purge is used following exposure of the wafer to the dose of the second chemically reactive precursor.

51. (New) The ALD process of claim 11, wherein the dose of the second chemically reactive precursor is delivered substantially uniformly over the wafer.

52. (New) The ALD process of claim 11, further comprising repeatedly exposing the wafer to the first and second chemically reactive precursor doses to form a material film on the wafer.

53. (New) The ALD process of claim 11, wherein a non-uniformity of a thickness of a resulting film is within +/- 1.5%, 1 sigma.

54. (New) The ALD process of claim 11, wherein the first and second chemically reactive precursors are delivered substantially uniformly via a showerhead or distribution plate.

55. (New) The ALD process of claim 11, wherein a purge follows exposure of the wafer to the starved dose of the first chemically reactive precursor, but no purge follows exposure of the wafer to the dose of the second chemically reactive precursor.

56. (New) The ALD process of claim 11, wherein exposure of the wafer to the second chemically reactive precursor follows exposure of the wafer to the starved dose of the first chemically reactive precursor without a purge, and a purge is used following exposure of the wafer to the dose of the second chemically reactive precursor.

57. (New) The ALD process of claim 11, wherein purges follow exposure of the wafer to both the starved dose of the first chemically reactive precursor, and the dose of the second chemically reactive precursor.

58. (New) The ALD process of claim 11, wherein exposure of the wafer to the second chemically reactive precursor follows exposure of the wafer to the starved dose of the first chemically reactive precursor without a purge, and no purge is used following exposure of the wafer to the dose of the second chemically reactive precursor.